Missouri Team Nutrition Survey

School Nutrition Policies

School Year 2004-2005



Missouri Department of Health and Senior Services Division of Community and Public Health



This report is a part of a Team Nutrition Project funded by United States Department of Agriculture. The report presents findings of a Team Nutrition Survey conducted in the 2004/2005 school year as a follow-up to a baseline survey held in the 2003/2004 school year.

The report reflects collaboration of Section of Chronic Disease Prevention and Nutrition Services, and Section of Public Health Practice and Administrative Support in the Missouri Department of Health and Senior Services.

Missouri Department of Health and Senior Services Julia E. Eckstein, Director

Division of Community and Public Health Glenda R. Miller, MPH, BSN,

BC CHNCS, Director

Section of Chronic Disease Prevention and Nutrition Services Deborah Markenson, M.S.,

R.D., Administrator

Section of Public Health Practice and Administrative Support Scott A. Clardy, Administrator

Contributors

Primary Authors: Kateryna Kalugina, Research

Analyst II

Rita Arni, RD, LD, Child Nutrition

Team Leader

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Survey Methodology

Questionnaire Design

The survey tool was developed using indicators from United States Department of Agriculture's Changing the Scene Improvement Checklist. More information about Changing the Scene: Improving the School Nutrition Environment is available at http://www.fns.usda.gov/tn/Resources/changing.html.

The purpose of the survey was to address the growing concern for overweight children in Missouri by assessing the quality of local school nutrition environments and developing strategies for creating healthier school nutrition environments. The survey was divided into the following sections:

- Nutrition and physical education,
- Food and beverage vending,
- School nutrition policies,
- · The nutrition environment, and
- The needs of your school.

A baseline survey was conducted in the 2003/2004 school year. The Team Nutrition (TN) questionnaire used in the 2004/2005 school year was slightly revised (Appendix A). Survey results are available at www.dhss.mo.gov/TeamNutrition/Survey.html.

Data Collection

At the end of April of 2005, letters inviting schools to participate in Team Nutrition survey were sent to all public schools in Missouri (2,267) and to 518 of the non-public schools participating in the National Lunch Program or Special Milk Program. Missouri schools for the severely handicapped, for the blind, and for the deaf were also invited to contribute to the survey. Principals were asked to assign the completion of the survey to the person most knowledgeable about nutrition, physical education, and school needs in that area at the school. Respondents were encouraged to consult with others if they were not sure of the answer to a question.

Data collection was completed in August 2005 with 837 responses. Non-public schools responded with 156 surveys, 523 surveys were received from public schools and 172 from public school districts.

Since the previous year's report reflected results on a per school district basis, it was decided to analyze the data using a whole school district as a unit of analysis for this year as well, to provide for comparison with the previous year.

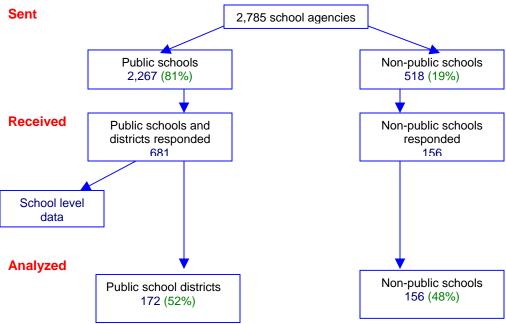
^{*} In Missouri, some school districts have only one school, so Team Nutrition surveys received from these districts can be considered as from both a school and a school district. In addition, if all schools in a district responded, information from these schools was aggregated into one survey and used in the analysis as for the entire district.

Response Rates

Five hundred twenty three (523) separate public schools responded out of 2,267 invited. Thus, the response rate for public schools was 23.1%. For non-public schools, the response rate was higher – 30.1% (invitation letter was sent to 518 non-public schools, and 156 completed questionnaires were received). In the analysis, 172 questionnaires from public school districts were used of the 524 total districts in Missouri in the 2004/2005 school year; therefore, response rate for public school districts was 32.8%.

Figure 1 shows the types of school agencies participating in TN Survey in the 2004/2005 school year.

Figure 1. Types of school agencies participating in Missouri Team Nutrition Survey 2004/2005 school year



The largest percentage of respondents (61%) were administrators; foodservice staff completed 25% of the surveys; while the remainder of surveys were completed by nurses or counselors (8%); and teachers or other non-specified staff (6%).

Data Processing Procedures

Data entry was performed using MS Access. Percentage estimates were calculated using SAS. MS Excel was used to generate charts.

Limitation to the Results

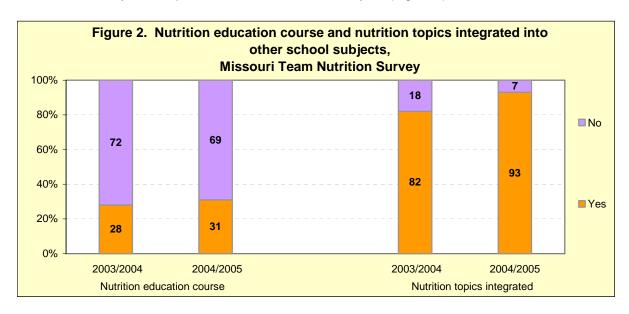
Some limitations in the information are due to the following:

- Potential data entry errors
- The invitation to participate in the survey was sent to Missouri public and non-public schools, while the analysis was based on whole school districts (Appendixes B and C show the geographical distribution of the survey contributors)
- The respondents comprise only 33% of all public school districts in Missouri*
- It was not possible to calculate a sample size for private schools
- Public school districts were included in the analysis, along with non-public schools

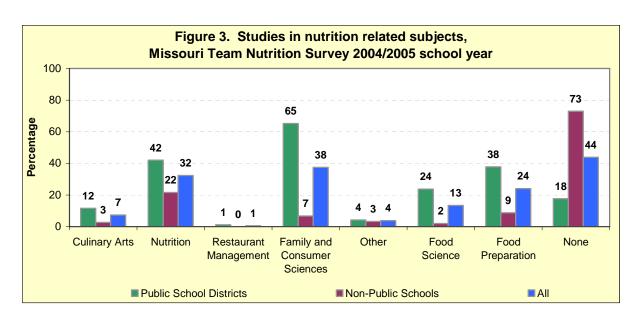
^{*} Further in the report, information received from public school districts was used to describe a situation in Missouri public schools.

Section 1 – Nutrition and Physical Education at Participating School Agencies

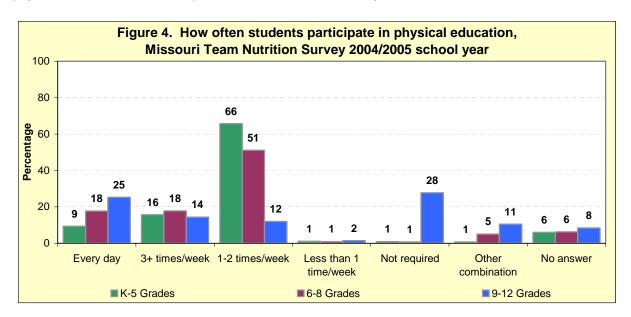
In the 2004/2005 school year, the Missouri Team Nutrition Survey found that 69% of respondents indicated that their school or school district had no required nutrition course for students. Instead, almost 93% of respondents indicated their schools or school districts integrated nutrition education into other areas of the curriculum, such as math, science and physical education. The percentage of school agencies in Missouri with a required nutrition course and nutrition topics included in other school subjects was higher in the 2004/2005 school year compared to the 2003/2004 school year (Figure 2).



Because it is important to provide education that changes behavior, the Team Nutrition Survey inquired whether participating schools and districts offer studies in related subjects, such as culinary arts, nutrition, restaurant management, food science, food preparation, and family and consumer sciences. Of those responding in the 2004/2005 school year, 38% of respondents reportedly offered family and consumer sciences, 32% offered nutrition, 24% offered food preparation, 13% offered food science, and 7% offered culinary arts (Figure 3). Forty four percent (44%) of participants did not offer studies in any nutrition related subjects during the 2004/2005 school year (in the Missouri 2003/2004 Team Nutrition Survey, the percentage of schools not offering nutrition studies was equal to 41%). Public school districts were more likely to provide education in nutrition related studies than were non-public schools. These are not required courses for students, therefore from the survey results it could not be determined how many students were actually reached by this instruction.



In response to the question, "How often do your students participate in physical education," the 2004/2005 Team Nutrition Survey results indicate that only 9% of grades K-5 and 18% of grades 6-8 reported daily participation in physical education (Figure 4). For approximately one of four high school students (28%), physical education was not required in the 2004/2005 school year.



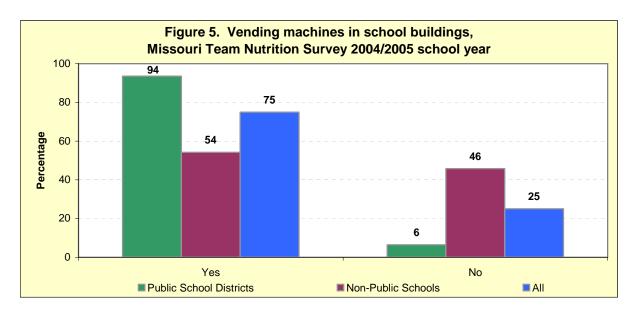
Currently, Missouri School Improvement Standards recommend that all elementary students receive 50 minutes of physical education per week, and for middle school and junior high students physical education is scheduled and taught for a minimum of 3000 minutes per school year [1]. When compared to the United States Surgeon General's recommendation of 60 minutes of moderate physical activity per day, it is apparent that students must participate in physical activity outside of school as well as during the school day. High school minimum standards are 1.0 unit, an amount equal to two semesters during the entire high school experience [2]. An average high school student may meet the United States Surgeon General's recommendation for physical activity only two out of eight semesters during his or her high school career.

In the 2004/2005 school year, the Missouri Team Nutrition Survey results reflect minimum state standards, showing the largest portion of high school students, 40%, receive daily physical education during their freshman year (grade 9); 40% of freshmen students were enrolled. However, there was a sharp reduction

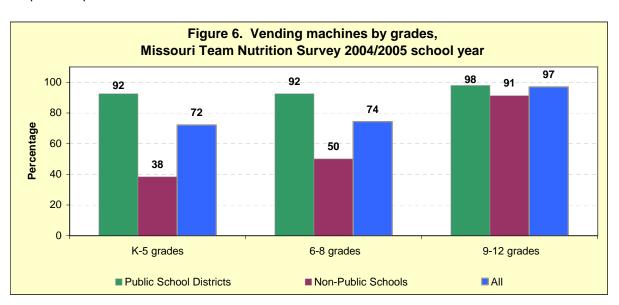
in students receiving daily physical education in grades ten, eleven and twelve, with 23%, 19%, and 19% enrolled, respectively.

Section 2 – Food and Beverage Vending

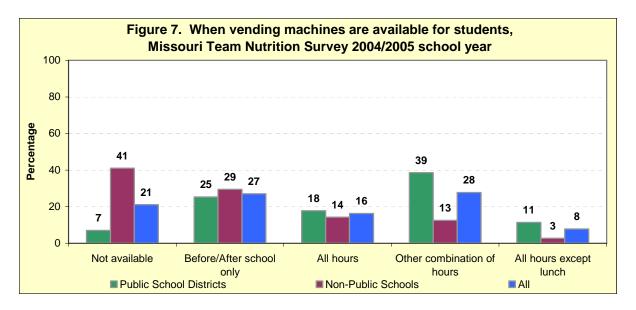
The survey found that 75% of public school district and non-public school respondents reported having vending machines in their buildings. A greater percentage of public schools, 94%, had vending available, versus only 54% of non-public schools (Figure 5).



Furthermore, over 97% of all responding public school districts with high schools and non-public high schools stated that vending machines were available for students (Figure 6). However, this figure was lower in grades 6-8 (74%), and 72% of elementary schools reported the availability of vending machines. Fewer non-public schools had vending machines available to elementary and middle school students compared to public school districts.

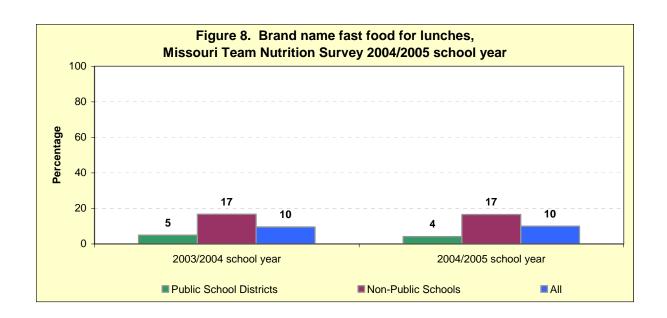


The survey went one step further by investigating when vending machines were available for use by students. Overall, 21% of respondents indicated that vending was not available to students. However, 16% reported that vending was available to students during all hours, including lunchtime. Twenty seven percent (27%) reported vending was only available before and after school hours; 28% reported a combination of other hours of availability and 8% reported availability all hours except lunchtime (Figure 7).

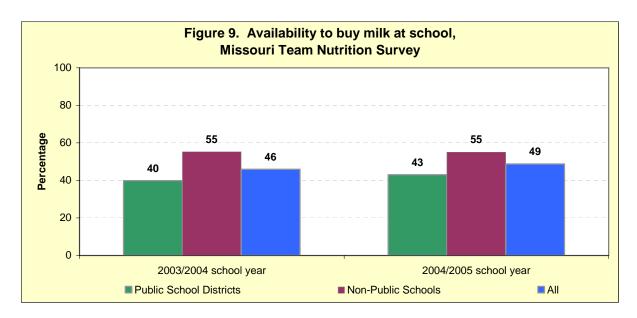


Federal regulations for the National School Lunch Program prohibit foods of minimal nutritional value, including soda, from being available in the cafeteria during mealtime. These foods, however, can be offered anywhere else on campus, including outside the cafeteria doors, at any time. There are no restrictions on many high-fat or high-sugar products, such as chocolate bars, potato chips, doughnuts, and fruit drinks [3, 4].

Another question posed by the Missouri Team Nutrition Survey was in regard to school agencies offering brand-name fast food for lunch, for example Subway, Taco Bell, Pizza Hut and Papa John's. Interestingly, only 10% of respondents reported that they offered these items with almost 90% not offering these fast foods. While public school districts were not likely to have brand name fast foods for lunch choices (only 4%), 17% of non-public schools offered this type of foods for students in the 2004/2005 school year. Similar proportions were revealed in the 2003/2004 Team Nutrition Survey (Figure 8).



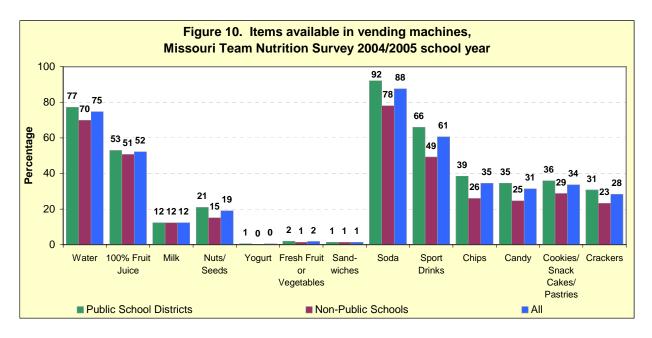
With teens' calcium needs in mind, the survey examined whether students could purchase milk from vending machines, at the school store, canteen or snack bar. Overall, 49% of Team Nutrition Survey participants in the 2004/2005 school year reported that students could purchase milk from vending machines, a school store, canteen, or snack bar, as opposed to 46% of respondents answering negatively to this question (5% of respondents did not answer this question). Compared to the schools that responded the previous year, the proportion of public school districts with milk availability for students was slightly higher in the 2004/2005 school year (Figure 9).



The Team Nutrition Survey requested information on the types of food and beverage items available in vending machines in schools. The percentage of total responding public school districts and non-public schools reported the specific item availability as follows (Figure 10): water: 75% of participants, 100% fruit

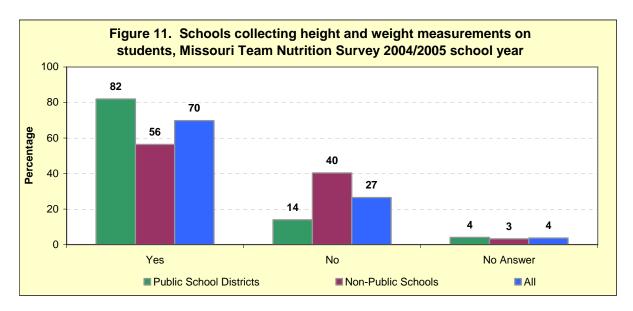
^{*} To calculate the percentage, the number of vending machines available for students with a particular item was used as a numerator and the number of school entities having vending machines available to students was used as a denominator, while in the 2003/2004 school year report, the number of all school participating was used as a denominator in this indicator.

juice: 52%, milk: 12%, nuts and seeds: 19%, yogurt: 0%, fresh fruit or vegetables: 2%, sandwiches: 1%. The bulk of the items available for students to purchase were soft drinks or snacks high in fat, sodium or added sugars with minimal nutritional value. Soda was available in 88% of schools, sport drinks: 61% chips: 35%, candy: 31%, cookies/snack cakes/pastries: 34%, and crackers: 28%. Respondents indicated public school districts were up to 1.5 times more likely to supply soda, sport drinks, chips, candy, and crackers in the vending machines.



Section 3 – Nutrition Policies

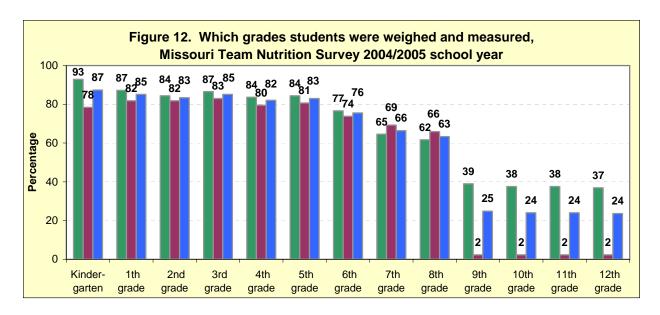
The survey addressed the issue of collection of height and weight data, from which body mass index (BMI) can be calculated and a child's BMI-for-age plotted on a growth chart*. Overall, 70% of respondents indicated that annual height and weight measurements were collected on students, 27% did not collect this data, and 4% did not answer this question (Figure 11).



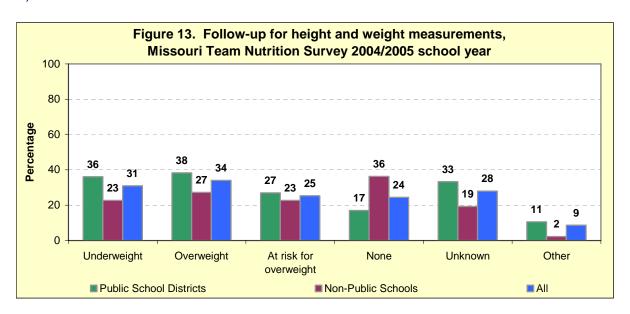
When asked to indicate in which grades students were weighed and measured, it was noted that in grades K through 5, over 82% of students were weighed and measured**, this figure decreased to 63% to 75% in middle school years, and decreased even further to 24% to 25% in high school years (Figure 12).

^{*} A diagram tree that school nurses may use for determining an appropriate referral for children less than the 5th percentile BMI-for-age is available from the DHSS at http://www.dhss.mo.gov/dnhs_pdfs/R_NPE_M5-02_tree_5_per.pdf, and for children greater than the 95th percentile BMI-for-age at http://www.dhss.mo.gov/dnhs_pdfs/R_NPE_M5-03_tree_95_per.pdf

^{**} As a denominator, the number of schools that collect annual height and weight measurements on students was used. In the 2003/2004 report, the number of all schools participating was used as a denominator in this indicator.



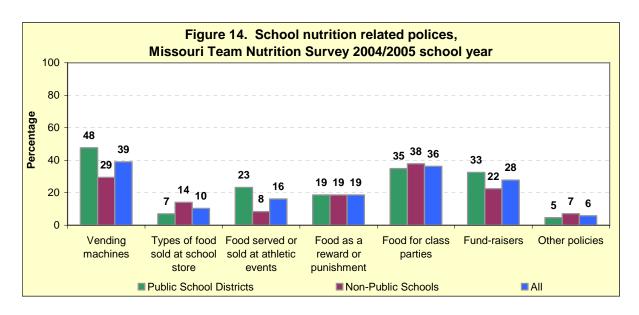
Of concern is the fact that the majority of respondents, 48%, indicated that no follow-up was provided as a result of these measurements, or they selected a 'Do not know' option for a purpose for the data collection. A small percentage of respondents indicated that follow-up was completed on underweight children, overweight children, and at risk for overweight children, that is, 31%, 34% and 25%, respectively (Figure 13).



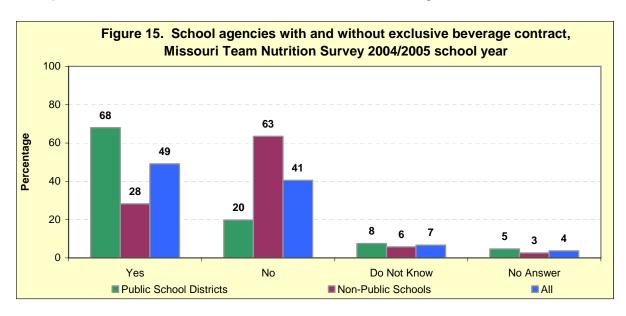
The Team Nutrition Survey questions asked if there were policies in place regarding the following: vending machines, types of food sold at the school store, food served or sold at athletic events, food as a reward or punishment, food for class parties, and lastly, fund-raisers. Two thirds (66%) of all participating public school districts and non-public schools stated that they had one or more policies regarding food. Overall, 39% of respondents with nutrition related policies reported having policies regarding vending machines*; 36% had policies regarding food for class parties; and 28% reported fund-raiser policies that may address the selling of candy (Figure 14). A few respondents reported having policies regarding food as a reward or punishment, 19%; types of food at the school store, 10%; or food served or sold at athletic events, 16%.

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^{*} Some respondents mentioned that vending machines policies did not regulate what type of foods and when foods could be vended. Rather, the policies included information on a vending machines contractor, where vending machines should be located, etc.



Soda consumption competes with the intake of healthy foods, but it also generates revenue for schools. When asked whether school districts had an exclusive beverage contract, 68% of the public school district respondents answered yes, while only 28% of the non-public schools answered yes (Figure 15). Twenty percent (20%) of the public school respondents, as opposed to 63% of non-public schools responding, reported that they did not have an exclusive beverage contract in place. Overall, 11% of respondents did not respond or were not aware of the existence of an exclusive beverage contract.



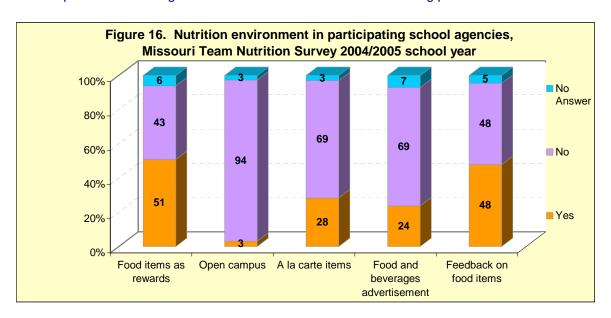
Section 4 – Nutrition Environment

The survey posed the question: Are food items or food coupons used as rewards for good behavior or academic performance? More than a half of respondents (51%) reported yes, 43% reported no (Figure 16). Most respondents to the Missouri Team Nutrition Survey in the 2004/2005 school year, 94%, reported not having an open campus for lunch. In other words, most students must eat lunch at school. This provides an opportunity for Missouri schools to promote and serve nutritious and attractive foods in a timely manner, within pleasant surroundings and to enjoy in the company of friends.

The Team Nutrition Survey asked whether schools offered a la carte items (foods not part of the National School Lunch Program) for sale during meals. Less than a third of schools responding (28%) indicated that they did offer a la carte items, while 69% reported they did not.

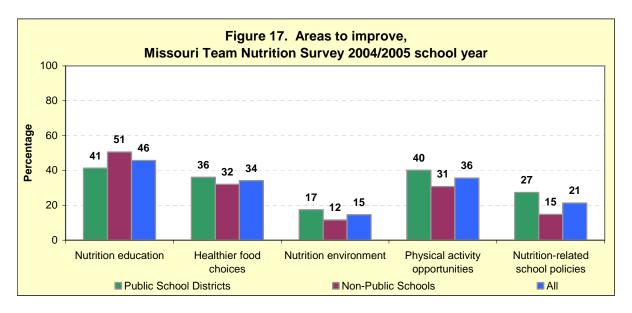
Among the survey respondents, 24% reported allowing food and beverage advertisements in school. This may be a revenue source for schools or a method to supplement available equipment, but may be contrary to the well-being of the students. Advertisements often target children at an early age to establish brand loyalty. Research indicates that it is difficult for young children to understand and resist the message of advertising aimed directly at them [5].

Student input is important for menu planning and testing new items in school. The Team Nutrition Survey inquired whether schools encouraged student feedback on food items offered through surveys or comment cards. Almost half, 48%, indicated that they do solicit student feedback; however, the same number of participants (48%) reported that they did not. Listening to student feedback could lead to students feeling more empowered in making a difference in their own decisions affecting personal health.



Section 5 – The Needs of Your School:

Finally, the survey addressed the areas in which public school districts and non-public schools participating in the Team Nutrition Survey desired improvement related to nutrition and physical activity. Overall, 46% of respondents would like to see improved nutrition education; 34% would like healthier food choices; 15% desired an improved nutrition environment; 36% indicated they would like more physical activity opportunities; and 21% indicated the need for better nutrition related school policies (Figure 17).



In addition, Missouri Team Nutrition Survey wanted to know opinions from respondents regarding overriding need or problem area in the nutritional health status of students. The comments were not included in the survey analysis, but some of them are listed in the Appendix D.

Conclusion: The results of the Missouri Team Nutrition Survey support the need to address the problem of overweight, undernourished, and sedentary children and youth through policies that create a healthy environment, beginning in school, the location where they spend the majority of their waking hours. Many public school districts and non-public schools have policies and practices for promoting and sustaining opportunities for healthy eating and physical activity at school.

Data exist to support the need for policies that improve the health of students. Schools benefit from well-nourished, physically active students through better test scores, improved attendance and behavior. Guidance is available for schools to implement nutrition policies, practices and curriculum that are evidence-based and/or best practices.

Health and success in school are a partnership. Schools cannot meet their primary goal of education if students and staff are not fit physically, mentally and socially. School nutrition policy will not solve all problems, but it has the power to hold schools accountable and create environments that foster the behaviors children need to develop as healthy, successful students.

Team Nutrition Survey



Thank you for participating in the Missouri Team Nutrition Survey. Your responses will assist the Department of Health and Senior Services develop strategies for creating healthier school nutrition environments.

Results of the 2004/2005 baseline Team Nutrition survey are available at www.dhss.mo.gov/team_nutrition.

Return survey no later than July 1, 2005 to:

Rita Arni, RD, LD
By e-mail: arnir@dhss.mo.gov
By fax: 573-522-3244
By mail: WIC and Nutrition Services
PO Box 570
Jefferson City MO 65102-0570

Questions regarding the survey may be directed to: Rita Arni, Child Nutrition Program Manager at 573-751-6204.

Please tell us about yourself:

Date: Name: Title: School District: School Name: City:						
Public School Non-Public School						
Grades represented in this school:						
A school employee including but not limited to foodservice director, administrator, school nurse or teacher may complete one survey per school. Mark all that apply. Are you a/an Administrator? Food service staff? Nurse? Counselor? Teacher? Other?						
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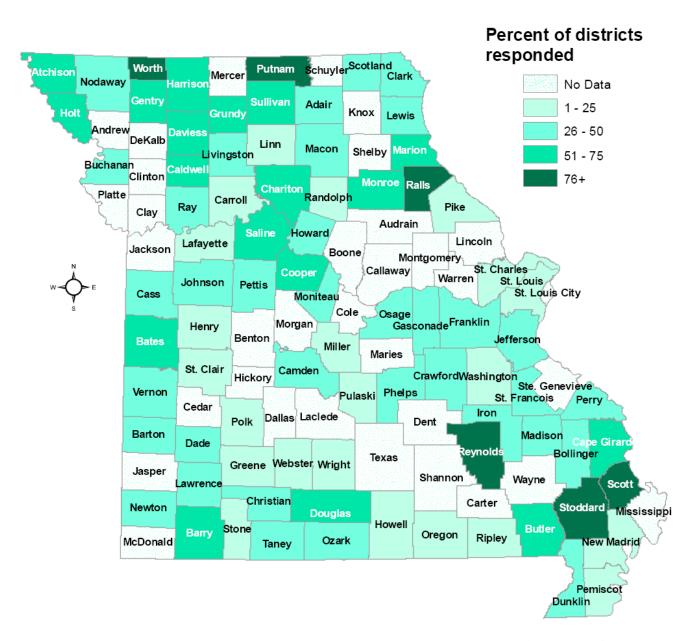
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social str	udies, h	ealth etc	?	☐ Don'	t know	cience,
How ofted		our stude	ents parti	cipate in p	onysicai	
Grade	Every day	3+ times/ wk	1-2 times/ wk	less than 1 time/wk	not required	Other (write in times/ wk)
K						
1 st						
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followin Culir Nutri Resta	g? nary Ar ition aurant M ily and	ts Managem	Foo	d Prepara	Science	
	ur scho	ol have v		ding at machines? ☐ No	your sc	hool:
☐ All h ☐ All h	ours	cept lun		ilable to th	ne students	?

Before/After school only Other combination of hours

	ine Nutrition Environment at your school:
(Cont'd):	Are food items or food coupons used as rewards for good
Does this school offer brand-name fast food (e.g., Subway,	behavior or academic performance? If unsure, check with
Taco Bell, Pizza Hut, Papa John's) for lunch choices? If	your school administrator.
unsure, check with your school administrator or foodservice	☐ Yes ☐ No
director.	
☐ Yes ☐ No	Do you have an "open campus" for lunch, where students are
Can students purchase milk from vending machines or at the	able to leave school premises during their lunch period? If
school store, canteen, or snack bar? If unsure, check with	unsure, check with your school foodservice director.
your school administrator or foodservice director.	Yes No
Yes No	
	Does your school offer a la carte items (foods not part of the
Please mark the following items available in vending	National School Lunch Program) for sale during meals? If
machines located at this school. If unsure, check with your	unsure, check with your school foodservice director.
school administrator or school nurse.	Yes No
100% Fruit Juice Water	105
Milk Soda	Are food and beverage advertisements allowed in this
	school? If unsure, check with your school administrator.
Sport Drinks Yogurt	
Chips Crackers	∐ Yes ☐ No
Candy Nuts/seeds	
Fresh Fruit or Vegetables	Does this school encourage student feedback on food items
Cookies/Snack Cakes/Pastries	offered through surveys or comment cards? If unsure, check
Sandwiches	with your school foodservice director.
Other	☐ Yes ☐ No
School Nutrition Policies:	The needs of this school:
Does your school collect yearly height and weight	<u>In</u> what areas would you like to see improvement?
measurements on students? If unsure, check with your	Nutrition Education
measurements on students: If unsure, eneck with your	Nutrition Education
school nurse.	☐ Physical Activity Opportunities
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school nurse. Yes No	Physical Activity Opportunities Healthier Food Choices
school nurse. Yes No If yes, mark all grades that apply	Physical Activity Opportunities
school nurse. Yes No If yes, mark all grades that apply	Physical Activity Opportunities Healthier Food Choices Nutrition-related school policies
school nurse. Yes No If yes, mark all grades that apply K 1 2 3 4 5 6 7 8 9 10 11 12	Physical Activity Opportunities Healthier Food Choices Nutrition-related school policies Nutrition Environment
school nurse. Yes No If yes, mark all grades that apply K 1 2 3 4 5 6 7 8 9 10 11 12 What types of children are provided follow-up from	☐ Physical Activity Opportunities ☐ Healthier Food Choices ☐ Nutrition-related school policies ☐ Nutrition Environment What is the single overriding need or problem area for your
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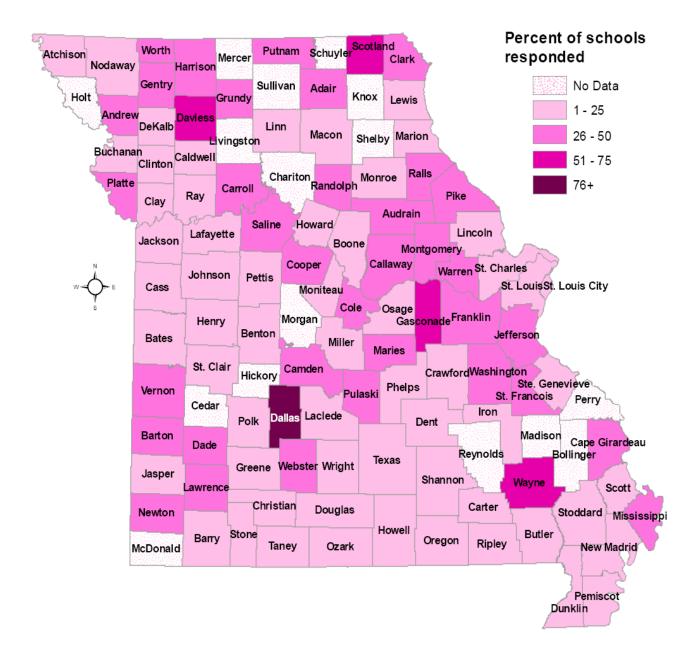
Response Rate for Public School Districts, Team Nutrition Survey 2004/2005 school year



Source: Missouri Team Nutrition Survey 2004/2005 school year Missouri Department of Health and Senior Services Division of Community and Public Health Public Health Practice and Administrative Supports Surveillance and Research Kateryna Kalugina, Research Analyst II 12/02/2005



Response Rate for Public Schools, Team Nutrition Survey 2004/2005 schools year



Source: Team Nutrition Survey 2004/2005 school year Missouri Department of Health and Senior Services Division of Community and Public Health Public Health Practice and Administrative Supports Surveillance and Research Kateryna Kalugina, Research Analyst II 11/30/2005 Some of overriding needs or problem areas for school and community to confront to raise the nutritional health status of students (feedback from respondents):

- Community education and the support of the school board.
- Money. Fresh fruit and vegetables are too expensive for the food budget, and government commodities are not always healthy choices, but they must be incorporated into the menu. And students/parents cannot afford for the cost of lunch to be raised in order to provide healthier choices.
- Finances. We would provide healthy shack choices if we had funding.
- More physical education offered. We have a lot of kids whose only exercise is physical education twice a week.
- The need for more physical education time, 20 minutes twice a week is not enough. Increase physical activity to help combat obesity is a major goal.
- For students who arrive early for school, I frequently let them run laps around the gym to increase physical activity. They enjoy doing that!
- Soda and snack machines
- While we recognize the nutritional issues related to the placing of soda machines in the school for student use, it would be impossible for us fund portions of our program without the revenue that these machines generate.
- Nutrition education in classroom at all grade levels.
- Better education and follow-up at home from parents.
- How do you get students to eat at least a little bit of the food served in the lunch program. Some students do not ever want to try certain foods and there seems to be such a waste.
- Convincing parents to provide healthy shacks and lunches. Convincing teachers to reward students without candy treat.
- Too many food reward. By lunch time the kids have already had pizza or ice cream. Then they do not want lunch
- We need parents to be involved with their overweight student diets. Parents do not want to address the issue of their child's obesity.
- We also need to work more cooperatively with our parents, so that both school and home are saying the same thing in terms of nutrition.
- Teachers providing "extra" unhealthy snacks and role-modeling healthy habits.
- The attribute of parents and teachers regarding healthy snacks prevents us from supplying school parties with these items.
- Get students and faculty to work with cafeteria staff.
- Getting parents to encourage children to eat healthy foods at home as well as school.
- Our school has many low income people who do the best that they can with their finances and also very little training nutrition. I feel that the community as well as myself need more training with the resources at hand.

References

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- 2 Graduation Requirements for Students in Missouri's Public Schools: Guidelines for Principals, Counselors and other School Personnel, September 2002, Missouri Department of Elementary and Secondary Education, http://dese.mo.gov/divimprove/sia/gradndex.htm (December 1, 2005).
- 3 U.S. Department of Agriculture, *National School Lunch Program and School Breakfast Program Nutrition Objectives for School Meals*, (from 7 CRR parts 210, 220), 59, 1994, http://www.fns.usda.gov/cnd/Governance/regulations.htm (December 1, 2005).
- 4 U.S. Department of Agriculture, Foods Sold in Competition with USDA School Meal Programs: A Report to Congress, Washington, DC, 2001.
- 5 Taras HL, Gage M. Advertised foods on children's television. Arch Pediatr Adolesc Med 1995;149:649-52